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Report on the Inspection of Experimental
Plantation Trees at the Priest River Experiment
Station - September 20, 1932

Complying with the request made by the forest officers, in particular Mr. F. M. Cossitt, of the Kaniksu National Forest, I made an inspection trip into the Priest Lake region to determine the cause of injury suffered by white pines and other conifers in this region. On the return trip I planned to fulfil my promise given earlier in the summer to examine the dead and dying trees on the plantation areas near the entrance to the Experiment Station grounds.

The western white pines nearest the fence and the main road were first examined and it was found that a large number of them were suffering from a peculiar type of disease apparently caused by a tiny aphid-like insect. This disease was reported by me three or four years ago as one new to western white pine and samples were submitted to Mr. Evenden at that time. The principal symptoms are: the turning red and partial casting of the older needles; the bleaching to a gray white of the old dead needles remaining on the twigs; the dwarfing of needles and twigs; the presence of abnormal "bumps" or swellings at the bases of the needle bundles (resembling the needle spurs of larch); and the presence of large numbers of tiny scale-like or aphid-like insects clustered at the bases of the needle bundles. Trees showing most of the foliage of the crown dead excepting the current season's needles are also common signs. Trees growing along the margins of stands, in the open, or on sites where the soil water supply may run low in the summer appear to be favorable localities for this type of injury. Lodgepole pine and Douglas fir are also attacked but suffer less injury than does western white pine. One lodgepole pine near the Station buildings appeared to be dying from this cause.

In a recent letter this disease has again been brought to Mr. Evenden's attention with the request that a conference be arranged for the purpose of discussing means of control. It is suggested that ladybird beetles be brought into

the infested region in an attempt at biological control. A large supply of these beetles can be obtained on Moscow Mountain located but a few miles from Moscow. The entomologist can, no doubt, prescribe an inexpensive spray program which can be applied to the more valuable trees found on experimental plots, Station grounds or lake shore cottage sites.

Another serious disease was noted in the plantation areas. This injury was evident through the "dead patches" of young trees scattered throughout the plantation among western white pines, ponderosa pines and other conifers. In all cases excepting two it was found that the trees had been killed by an attack of the honey mushroom, Armillaria mellea. The attacked trees have been killed in an ever-widening though rough circle. Several trees which died this summer were found on the margins of such circles. The dead trees invariably showed all the symptoms of the honey mushroom disease of which brief mention was made in the September 21 issue of the Northern Region News (Vol. 4, No. 18). Evidently the infection carried over in the soil or duff or in old infected roots and stumps after the area was cleared in preparation for the planting of young pines. This is a common experience with such a disease and presents a factor which is difficult to cope with in any attempt to control the organism.

If it is found desirable to attempt control on the plantation areas, recommendations can be prepared which if carried out should serve to check the further spread of this disease to the surrounding healthy transplants.

Two of the trees, both yellow pines, were found to be infected with the root fungus, Stereum sanguinolentum. This organism is capable of parasitizing weakened trees and in this case it caused the death of two of them. Complete removal of all infected parts of the tree including the roots is essential if control measures are to be effective. The infected material must in all cases be burned.

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